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I4 58. (Amended) The device of claim 57 wherein said channel formation region is crystallized by laser irradiation through a layer comprising silicon oxide on said channel formation region.

REMARKS

The Office Action of January 14, 2003 was received and carefully reviewed. Reconsideration and withdrawal of the currently pending rejections are requested for the reasons advanced in detail below.

Claims 2, 3, 6-8, 11, 12, 15-17, 19-35 and 37-67 were pending prior to the instant amendment. By this amendment, claims 22, 43-53, 55 and 58 are amended. Therefore, claims 2, 3, 6-8, 11, 12, 15-17, 19-35 and 37-67 are currently pending in the instant application.

OK Initially, claim 22 is objected to for a punctuation issue in line 4 thereof. Claim 22 is amended herein to change the ":" to a "," in order to overcome this objection.

OK Claims 43-53, 55 and 58 are rejected under 35 U.S.C. 112, first paragraph, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the art that the inventors, at the time the application was filed, had possession of the claimed invention. Applicants amend the above claims in order to overcome the rejection under 35 U.S.C. 112 rejection

Claims 60-67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Troxell et al. in view of Ikeda, further in view of Shimada et al. This rejection is traversed for the reasons advanced in detail below.

The cited references fail to teach or suggest each and every feature of the rejected claims, particularly, independent claims 60 and 61, since the combination of references include sufficient teaching to reach the features of the claimed invention. Specifically, if an AlN layer 12 of Ikeda is applied to a silicon nitride layer 12, 14 of Troxell et al. as suggested by the Examiner in the rejection, it appears that silicon dioxide layer 16 is formed on the AlN layer. In other words, the

not true,
AIN
replace SiN,
Small structure
on the top is
AIN and SiO₂.


Examiner's proposed combination of Troxell et al. and Ikeda discloses a laminated layer of aluminum nitride and silicon nitride, but an insulating film comprising aluminum nitride and oxygen is never disclosed. Therefore, Applicants contend for these reasons and those advanced in prior responses that the Section 103(a) rejection is not appropriate.

OK

Claims 2, 3, 6-8, 11, 12, 15-17, 20, 22-26, 28-35, 37, 38, 40-49 and 51-53 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 15-26 of U.S. Patent No. 5,583,369 ('369 patent) in view of Troxell et al.; claims 15-26 are rejected under the same doctrine over the '369 patent in view of Troxell et al.; claims 21, 27, 39 and 50 are similarly rejected over the '369 patent in view of Mano et al.; and claims 54-67 are also rejected in the same manner over the '369 patent in view of Shimada et al. Applicants submit a Terminal Disclaimer with respect to the '369 patent to overcome this rejection.

In view of the foregoing, it is respectfully requested that the rejections of record be reconsidered and withdrawn by the Examiner, that claims 22, 43-53, 55 and 58 be allowed and that the application be passed to issue. If a conference would expedite prosecution of the instant application, the Examiner is hereby invited to telephone the undersigned to arrange such a conference.

Respectfully submitted,


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MARKED UP VERSION

22. (Amended) A semiconductor device comprising:
a substrate having a front surface and a rear surface;
an aluminum nitride insulating film containing therein oxygen provided under said rear surface of the substrate; and
a transistor provided over said front surface of the substrate, said transistor having at least a channel formation region comprising crystalline silicon, a gate insulating film adjacent to said channel formation region, and a gate electrode adjacent to said channel formation region with said gate insulating film interposed therebetween.
43. (Amended) The device of claim 2 wherein said channel formation region is crystallized by laser irradiation through a layer comprising [at least one of] silicon oxide [and silicon nitride] on said channel formation region.
44. (Amended) The device of claim 3 wherein said channel formation region is crystallized by laser irradiation through a layer comprising [at least one of] silicon oxide [and silicon nitride] on said channel formation region.
45. (Amended) The device of claim 6 wherein said channel formation region is crystallized by laser irradiation through a layer comprising [at least one of] silicon oxide [and silicon nitride] on said channel formation region.
46. (Amended) The device of claim 7 wherein said channel formation region is crystallized by laser irradiation through a layer comprising [at least one of] silicon oxide [and silicon nitride] on said channel formation region.

47. (Amended) The device of claim 8 wherein said channel formation region is crystallized by laser irradiation through a layer comprising [at least one of] silicon oxide [and silicon nitride] on said channel formation region.

48. (Amended) The device of claim 19 wherein said channel formation region is crystallized by laser irradiation through a layer comprising [at least one of] silicon oxide [and silicon nitride] on said channel formation region.

49. (Amended) The device of claim 20 wherein said channel formation region is crystallized by laser irradiation through a layer comprising [at least one of] silicon oxide [and silicon nitride] on said channel formation region.

50. (Amended) The device of claim 21 wherein said channel formation region is crystallized by laser irradiation through a layer comprising [at least one of] silicon oxide [and silicon nitride] on said channel formation region.

51. (Amended) The device of claim 22 wherein said channel formation region is crystallized by laser irradiation through a layer comprising [at least one of] silicon oxide [and silicon nitride] on said channel formation region.

52. (Amended) The device of claim 23 wherein said channel formation region is crystallized by laser irradiation through a layer comprising [at least one of] silicon oxide [and silicon nitride] on said channel formation region.

53. (Amended) The device of claim 24 wherein said channel formation region is crystallized by laser irradiation through a layer comprising [at least one of] silicon oxide [and silicon nitride] on said channel formation region.

55. (Amended) The device of claim 54 wherein said channel formation region is crystallized by laser irradiation through a layer comprising [at least one of] silicon oxide [and silicon nitride] on said channel formation region.

58. (Amended) The device of claim 57 wherein said channel formation region is crystallized by laser irradiation through a layer comprising [at least one of] silicon oxide [and silicon nitride] on said channel formation region.